Operating Instructions

Panel Mounting Devices

> 8003/1

STAHL

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2 General Information

2.1 Manufacturer

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2.2 Operating Instructions Information

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Subject to alterations.

3 Intended Use

The panel mounting devices switch load, control and signal circuits and are certified for use in hazardous areas of Zones 1 and 2.

Types 8003/1.1 und 8003/1.3 are complete certified explosion-protected equipment suitable for installation in enclosure walls, covers of electric devices, switch panels or control cabinets.

Types 8003/1.2 are incomplete, explosion-protected electrical equipment suitable for installation in enclosures of type of protection "increased safety" according to IEC/EN 60079-7.

The devices are designed for single-hole mounting D 30 to EN 50007 in combination with actuators Type 8602/2. The standard switches and standard key-operated switches are "latching" in all positions. In the standard key-operated buttons, the key is withdrawable in all positions. Due to integration of coding elements, the switches can be converted to the “spring return“ or “latching, key non-withdrawable“ functions.

4 General Safety Instructions

The devices must be used only for the permitted purpose. Incorrect or impermissible use or non-compliance with these instructions invalidates our warranty provision.
Any alterations and modifications to the device impairing its explosion protection are not permitted. Use the device only if it is undamaged and clean.

⚠ WARNING
Installation, maintenance, overhaul and repair may only be carried out by appropriately authorised and trained personnel.

Observe the following information during installation and operation:

- Any damage can invalidate the explosion protection
- National and local safety regulations
- National and local accident prevention regulations
- National and local assembly and installation regulations (e.g. IEC/EN 60079-14)
- Generally recognized technical regulations
- Safety instructions in these operating instructions
- Characteristic values and rated operating conditions on the rating and data plates
- Additional instruction plates fixed directly to the device
- Type 8003/1.2: when installed in enclosures of type of protection “increased safety“, the conditions given in IEC/EN 60079-0 and IEC/EN 60079-7 must be observed
- Types 8003/1.1 and 8003/1.3: the backs of the devices must be protected against mechanical damage

5 Conformity to Standards

The relevant standards are listed in the EC Declaration of Conformity or IECEx Certificate of Conformity. These documents are available for download in the download area on the internet page www.stahl-ex.com.

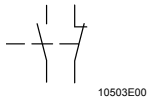
6 Transport and Storage

- Transport and storage are only permitted in the original packing.

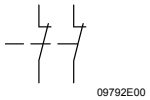
7 Technical Data

Explosion protection		
Gas explosion protection	8003/1.1	⟨Ex⟩ II 2 G Ex d e IIC T6
	8003/1.2	⟨Ex⟩ II 2 G Ex d e IIC
	8003/1.3	⟨Ex⟩ II 2 G Ex d e IIC T6
Gas explosion protection (IECEx)	8003/1.1	Ex d e IIC T6
	8003/1.2	Ex d e IIC
	8003/1.3	Ex d e IIC T6
Dust explosion protection	8003/1.1	⟨Ex⟩ II 2 D Ex tD A21 IP65 T80°C
	8003/1.3	
Dust explosion protection (IECEx)	8003/1.1	Ex tD A21 IP 65 T80°C
	8003/1.3	
Certificates	8003/1.1	PTB 02 ATEX 1057 X
	8003/1.2	PTB 02 ATEX 1080 U
	8003/1.3	PTB 02 ATEX 1057 X
IECEx certification	8003/1.1	IECEx PTB 06.0065X
	8003/1.2	IECEx PTB 06.0066U
	8003/1.3	IECEx PTB 06.0065X
Ambient temperature	- 20 ... + 60 °C	
	- 55 ... + 60 °C for versions with silicone seal	
Rated operational voltage	max. 550 V	
Rated operational current	max. 6 A	

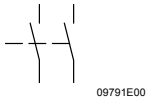
Schematic



8003/11.



8003/12.



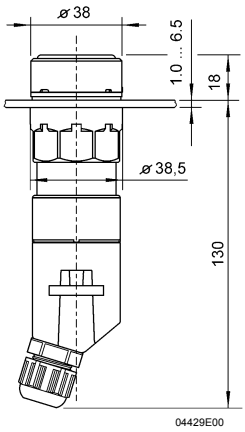
8003/13.

8003/14.

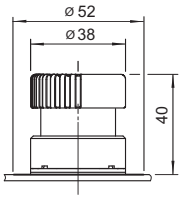
Min. voltage*	12 V AC / DC			
Min. current*	50 mA			
	* Typical values dependent on conditions of use			
Switching capacity	Rated operating characteristics according to utilisation category			
	AC-15	AC-12	DC-13	DC-13
	500 V max. 6 A max. 1250 VA	500 V max. 6 A max. 3000 VA	60 V max. 6 A	110 V max. 1 A max. 110 W
Material				
Enclosure	Polyamide			
Contact material				
Standard	Silver-nickel			
Special	Silver-nickel, gold-plated			
Service life				
Contact element	10^6 operating cycles			
Degree of protection	IP65 (front side IP66)			
	Degree of protection acc. to IEC/EN 60529			
Cable entry	Type 8003/1.1: M16 x 1.5 (∅ 4 - 9 mm)			
Connection cross-section	0.75 ... 1.5 mm^2			
Weight	0.0825 kg (without connecting cable and actuator)			

8 Dimensions

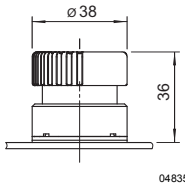
Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



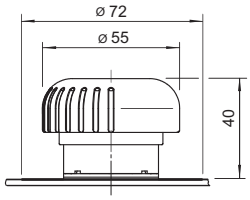
8003/1.1-001
Pushbutton with connection chamber



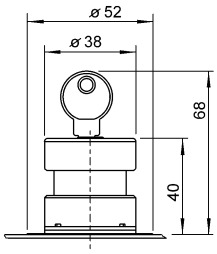
8003/... -010, -012
Mushroom stay-put button



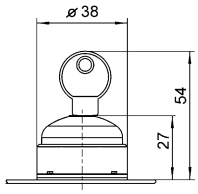
8003/...-003
Mushroom pushbutton



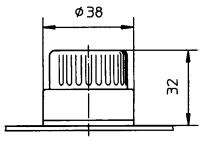
8003/...-015
Mushroom stay-put button



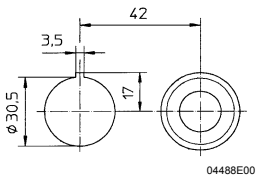
8003/...-006, -009
Mushroom stay-put button with key lock



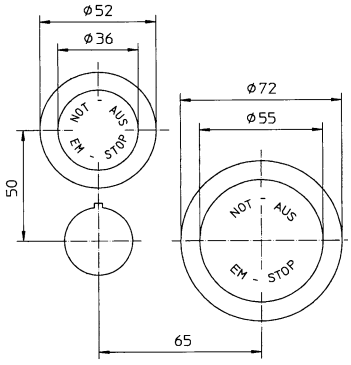
8003/...-008
Key-operated switch



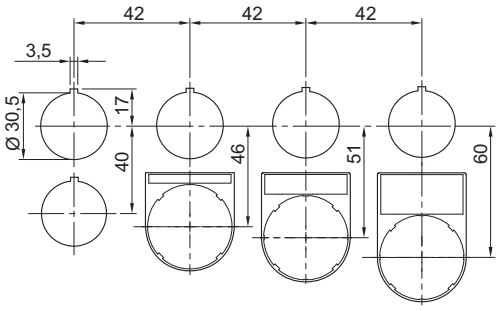
8003/...-005
Selector switch



Cut-out for aligning several devices ø38 mm in a panel



Cut-out for EM-STOP button (**8003/...-009, -010, -015**)

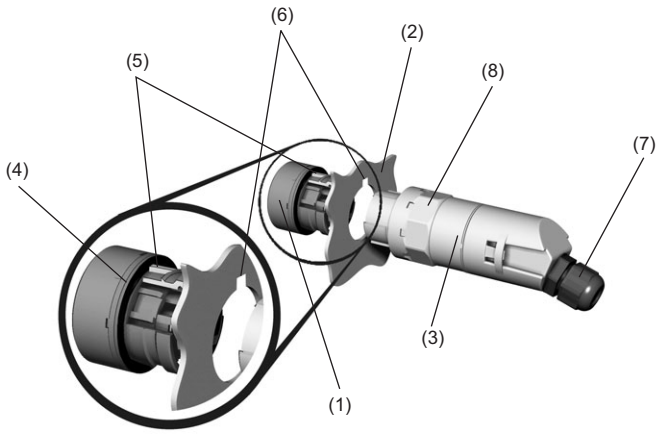


Cut-out
with / without additional identification plate

9 Assembling and Dismantling

The panel mounting devices are suitable for installation in enclosure walls or switch panels with a wall thickness of 1.0 ... 6.5 mm. The mounting hole diameter is 30.5 mm.

Single hole mounting



(1) Actuator
(2) Installation wall
(3) Panel mounting device
(4) Seal
(5) Rib
(6) Groove
(7) Cable gland
(8) Threaded nut

When assembling, please note that:

✗ The panel mounting device (3) may not be set at an angle!
✗ The panel mounting device (3) and the actuator (1) must be firmly attached in the installation wall (2).
✗ The seal (4) must be precisely inserted.
✗ Tightening torque of the threaded nut: 2.5 Nm.

Assembling:

▶ Push the actuator (1) into the installation wall (2) and lock it into position.
▶ Push the panel-mounting fixture (3) onto the actuator (1) from the back of the installation wall.
▶ Tighten the actuator (1) against the installation wall (2) to which it is fitted by turning the threaded nut (8).

⚠ WARNING
For key-operated switches 8003/1..-008 and rotary actuators 8003/1..-726 and 8003/1..-727 the following mounting instructions must be observed: ✗ The rib (5) must sit properly in the groove (6) in the installation wall (2). ✗ The panel-mounting fixture (3) must be inserted in such a way that the cable gland (7) is rotated by 180°, relative to the groove (see single hole mounting figure: groove at the top, cable gland downward

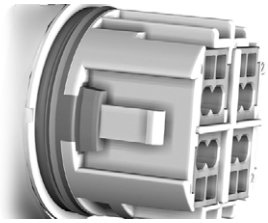
10 Installation

10.1 Electrical Connection

☞	8003/1.1: versions with spring clamp terminal and connection chamber 8003/1.2: versions with spring clamp terminal 8003/1.3: versions with connecting cable

- The conductor must be carefully connected.
- The conductor connection must reach to the terminal.
- When stripping the insulation, the conductor must not be damaged (nicked).
- To ensure that the maximum permissible conductor temperatures are not exceeded, select suitable cables and means of running them.
- The information given in chapter "Technical Data" must be observed.

⚠ WARNING
Please note that when connecting the device within a hazardous area, the connection must be made in a type of protection corresponding to the zone.



11611T00

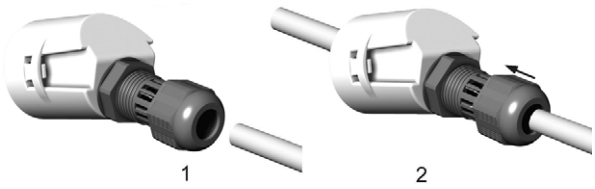
Connection cross-sections:
8003/1.1: 0.75 ... 1.5 mm^2
8003/1.2: 0.5 ... 2.5 mm^2
8003/1.3: 4 x 1.0 mm^2

Usable copper conductors:
single wire, stranded, finely or very finely stranded

10.2 Versions with Spring Clamp Terminal for Type 8003/1.1

Cable gland

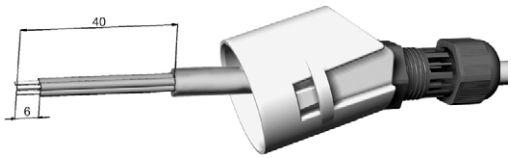
Use only cables that have an outer diameter of 5 ... 9 mm.



11612T00

- Push the cable into the cable gland (1) from behind.
- Push the cable into the connection chamber cover until there is a sufficient length left free on the other side to enable connections to be prepared (2).

Preparing the cable for type 8003/3.1

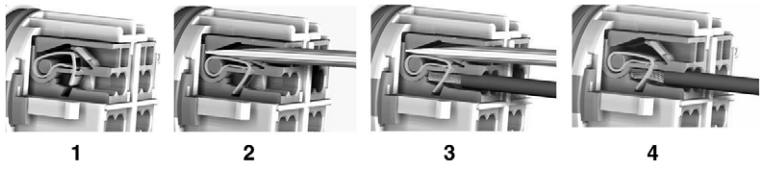


11613T00

- Strip 40 mm of the insulation of the conductor.
- Strip 6 mm of the insulation of the wires.

⚠ WARNING
To ensure the required clearance and creepage distance, the specified stripping length of the wires (6 mm) must be precisely complied with.

Conductor connection for types 8003/1.1 and 8003/1.2

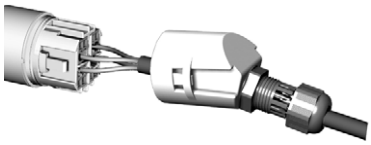


11614T00

- ▶ (1) Sectional view of the spring clamp terminal.
- ▶ Open the spring clamp terminal (2) using a slotted screwdriver (0.6x3.5 mm form A, DIN 5264/ISO 2380-1). The screwdriver blade holds the spring clamp terminal open, thus enabling the conductor to be introduced.
- ▶ Introduce the prepared conductor (3).
- ▶ Remove the screwdriver, thus securely clamping the conductor (4).

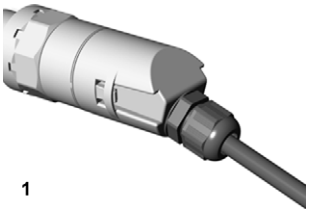
Closing the connection chamber of type 8003/1.1

Connection chamber open

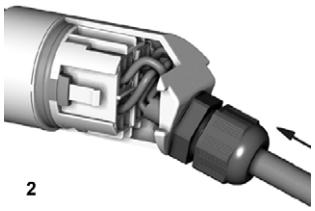


11615T00

Opening the connection chamber cover



11616T00

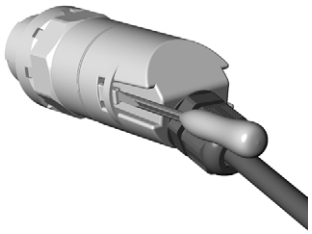


11617T00

- ▶ Push the connection cover onto the terminal support (1) until it snaps into place.
- ▶ Push the cable toward the connection chamber cover (2).
- ▶ Tighten the gland nut to a torque of approx. 1.3 Nm. The connection chamber is now tightly sealed.

⚠ WARNING
▶ Cables must be fixed in position. ▶ A strain relief must be provided.

Opening the connection chamber of type 8003/1.1



11618T00

- ▶ Open the connection chamber only if you have a suitable tool, for example a slotted screwdriver 0.6 x 3.5.
- ▶ Position the screwdriver against one of the latching tabs and turn it by 90°.
- ▶ Slightly pull back the connection chamber cover and hold it in this position.
- ▶ Position the screwdriver against the second latching tab and turn it by 90°.
- ▶ Remove the connection chamber cover.

11 Putting into Service

Before putting into service

- ▶ Make sure that the device is not damaged.
- ▶ Make sure that the device has been installed correctly.
- ▶ Remove any foreign objects from the device.
- ▶ Check whether the cable glands have been tightened properly.
- ▶ Check whether screws and nuts have been tightened properly.
- ▶ Check the tightening torques.

12 Maintenance, Overhaul and Repair

⚠ WARNING
Do not open when live!

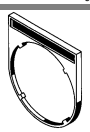
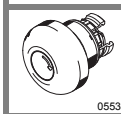
The following details must be checked during maintenance:

- ✗ Compliance with the permitted temperatures (acc. to IEC/EN 60079)
- ✗ Damage to the enclosure and seals
- ✗ Cables are held securely in place

13 Accessories and Spare Parts

⚠ WARNING

Use only original R. STAHL accessories and spare parts.

Designation	Illustration	Description		Art. no.	Weight kg
Spare key	10545E00	for all key-operated buttons / key-operated switches			
		Standard locking MS1		107109	0.008
		Special locking MS2 ... MS20 (specify as text)		107110	0.008
Closing part	05647E00	for closing of unused mounting holes ∅ 30.5 mm		155329	0.016
Additional identification plate	 05543E00	Label mount, size 1, without symbol label Text: 1 line		155632	0.001
		Label mount, size 2, without symbol label Text: 1 or 2 lines		155687	0.002
		Label mount, size 3, without symbol label Text: 1, 2 or 3 lines		155844	0.002
		for actuators to fit ∅ 30.5 mm holes Symbol labels: without text with text; please specify text: HAND - 0 - AUTO / I - 0 - II OFF - • - ON / 0 - I - II 0 - I / 0 - Betrieb - I I - II / 0 - • - I			
Coding kit for key-operated switch		Coding kit for key-operated switches Types 8003/...-008-.			
		Coding element, 1 x red, 1 x yellow		155432	0.001
		Coding element, 2 x yellow		155373	0.001
		Coding element, 1 x green, 1 x red		155403	0.001
Support plate, yellow	05024E00	for buttons with EM-STOP function			0.000
		∅ 38 mm		130391	0.001
		∅ 55 mm		130524	0.002
Actuator	05733E00	for pushbuttons	**8003/...-001**	155525	0.023
	05538E00	for mushroom pushbuttons ∅ 38 mm, black	**8003/...-003**	155526	0.028
	05536E00	for mushroom stay-put buttons ∅ 38 mm, red (EM-STOP)	**8003/...-010**	155531	0.030
		for mushroom stay-put buttons ∅ 38 mm, black	**8003/...-012**	155541	0.030
	 05533E00	for mushroom stay-put buttons ∅ 55 mm, red (EM-STOP)	**8003/...-015**	155532	0.033
	05537E00	for mushroom stay-put buttons with key lock ∅ 38 mm, red (EM-STOP)	**8003/...-009**	155530	0.062
	05734E00	for key-operated switches with 2 switching positions	**8003/...-008-2**	155528	0.049
		for key-operated switches with 3 switching positions	**8003/...-008-3**	155529	0.049
	05535E00	for selector switches	**8003/...-005**	155527	0.030

Designation	Illustration	Description		Art. no.	Weight kg
Symbol label for pushbutton and selector switch	05753E00	Colour	Text		
		blue	Plain label (specify text)	155910	0.001
		yellow	Plain label (specify text)	155913	0.001
		red	Plain label (specify text)	155896	0.001
		green	Plain label (specify text)	155900	0.001
		white	Plain label (specify text)	155907	0.001
		black	Plain label (specify text)	155904	0.001
		blue	Plain label	155911	0.001
		yellow	Plain label	155914	0.001
		red	Plain label	155897	0.001
		green	Plain label	155901	0.001
		white	Plain label	155908	0.001
		black	Plain label	155905	0.001
		black	I	155846	0.001
		green	I	155689	0.001
		white	I	155892	0.001
		black	II	155854	0.001
		green	II	155706	0.001
		red	0	155596	0.001
		black	0	155783	0.001
		black	I0	155771	0.001
		red	↱	155567	0.001
		black	⇉	155736	0.001
		black	↑	155749	0.001
		black	↗	155761	0.001
		black	CLOSE	155878	0.001
		black	Zu	155874	0.001
		black	Open	155868	0.001
		black	EIN	155862	0.001
		red	OFF	155654	0.001
		red	Aus	155634	0.001
		black	Aus	155806	0.001
		red	STOP	155615	0.001
		black	STOP	155795	0.001
		green	START	155721	0.001
		white	START	155889	0.001
		blue	RESET	155894	0.001
		green	ON	155671	0.001
		black	Auf	155883	0.001
		black	Ab	155886	0.001
		black	Links	155827	0.001
		black	Rechts	155837	0.001

14 Disposal

The national waste disposal regulations have to be observed.

15 EC Declaration Of Conformity

EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE

Wir; *we; nous*

R. STAHL Schaltgeräte GmbH, Am Bahnhof 30, 74638 Waldenburg, Germany

8003/1.1
8003/1.3

erklären in alleiniger Verantwortung, dass das Produkt
hereby declare in our sole responsibility, that the product
déclarons, sous notre seule responsabilité, que le produit

Taster für Schalttafeleinbau
Push button for panel mounting
Bouton poussoir pour encastrement

mit der **EG-Baumusterprüfbescheinigung:**
under *EC-Type Examination Certificate:*
avec *Attestation d'examen CE de type:*

PTB 02 ATEX 1057 X
(Physikalisch-Technische Bundesanstalt
Bundesallee 100, 38116 Braunschweig)

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
which is the subject of this declaration, is in conformity with the following standards or normative documents
auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants

Bestimmungen der Richtlinie *Terms of the directive* *Prescription de la directive*	Nummer sowie Ausgabedatum der Norm *Number and date of issue of the standard* *Numéro ainsi que date d'émission de la norme*
94/9/EG: **ATEX-Richtlinie** *94/9/EC:* *ATEX Directive* *94/9/CE:* *Directive ATEX*	EN 60079-0: 2006 EN 60079-1: 2007 EN 60079-7: 2007 EN 61241-0: 2006 EN 61241-1: 2004
2004/108/EG: **EMV-Richtlinie** *2004/108/EC:* *EMC Directive* *2004/108/CE:* *Directive CEM*	

Waldenburg, 02. Nov. 2010

Ort und Datum
Place and date
Lieu et date

i.V.

J.-P. Rückgauer
Leiter Entwicklung und Technik
Director Design and Technology
Directeur Développement et Technique

i.V.

Dr. S. Jung
Leiter Qualitätsmanagement
Director Quality Management Dept.
Directeur Dép. Assurance de Qualité

F-4174-601 11/2009 STMZ

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EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE

Wir; *we; nous*

R. STAHL Schaltgeräte GmbH, Am Bahnhof 30, 74638 Waldenburg, Germany

8003/1.2
8003/1.4

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under *EC-Type Examination Certificate:*
avec *Attestation d'examen CE de type:*

PTB 02 ATEX 1080 U
(Physikalisch-Technische Bundesanstalt
Bundesallee 100, 38116 Braunschweig)

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16 IOM sheet

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INSTALLATION OPERATION & MAINTENANCE SHEET

Series 8003/1

Panel Mounted Pushbuttons and Selector Switches

Please read this entire document before beginning any work.

1. Safety Instructions

Installation and maintenance of these devices should only be performed by qualified personnel in accordance with the National Electrical Code (NEC) (NFPA 70) or the Canadian Electrical Code (CEC) and any applicable code regulations.

CAUTION:

- Disconnect power supply before installing or servicing these devices.
- Operate only undamaged devices with observations of the operating parameters in Section 2.

2. Technical Data

Please refer to the technical data on the device.

2.1 Certifications

File No. E182378
Class I, Zone 1, AEx de IIC T6
Class I, Zone 1, Ex de IIC T6
Class I, Div. 2, Groups A,B,C & D

See information on the device

2.2 Ambient temperature range: -30°C to +55°C.

2.3 Storage temperature range: -55°C to +100°C.

2.4 Environmental protection type: 3, 4; 4x IP66/IP20 at terminals depending on enclosure (see section 3).

2.5 General electrical data:

2.5.1 Cage clamp terminal capacity: 2x 18 AWG to 2x 12 AWG.

2.5.2 Switching capacity: AC, 600V, 10A max. (A600).

2.5.3 Lowest Energy: 12V AC/DC, 50mA.

2.5.4 Contact Arrangements: See nameplate on the device. Contact numbers on the device are embossed next to the terminal openings.

3. Installation of devices 8003/1••

These explosion protected electrical devices are typically installed in an electrical panel or enclosure. The types of enclosures needed for the different area classifications indicated in the left column of the table below, are stated in the middle or right column.

Enclosure Type Rating For Installation

Area Classification of Use	Devices with Cap 8003/1•1 or with Cap & Lead 8003/1•3	Devices with Cage Clamps 8003/1•2 (without Cap)
Class I, Zone 1	Enclosure Type① 1, 2, 3, 3R, 4, 4X, 12, 13	Enclosure AEx e or Ex e
Class I, Division 2 Groups A, B, C, & D	Enclosure Type 1, 2 ,3, 3R, 4, 4X, 12, 13	

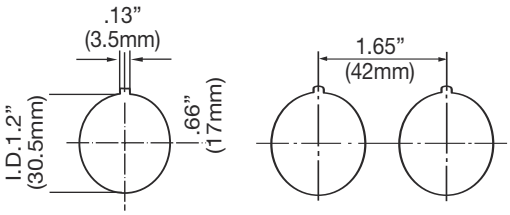
①Terminate leads in AEx e Terminal Box

3.1 Punching Knock-outs

- Punch 1.2" diameter knock-outs (30.5mm) into the panel. These devices can be mounted into walls between 0.04 - 0.25" (1.0 … 6.5mm)
- Observe the clearances.

3.2 Removing the actuator from the contact block:

- Turn the retainer nut counter-clockwise as far as it will go.
- Pull off the actuator.



When installing devices with terminal cap, type 8003/1•1, skip section 4.

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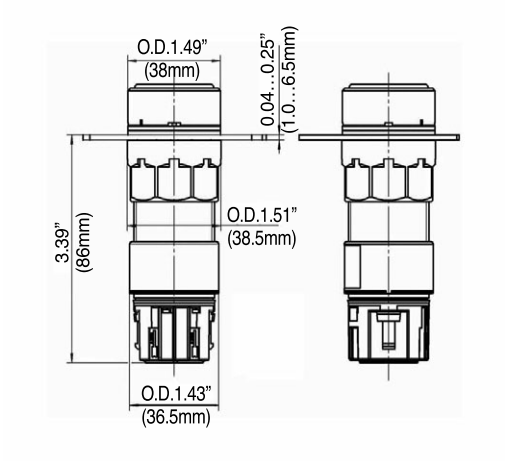
4. Installation of devices 8003/1•2 into the panel.

4.1 Dimensions

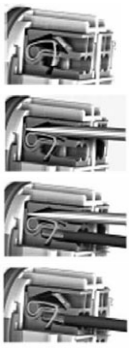


- Push the actuator from the front through the panel knock-out making sure the gasket is seated flat against the panel and lock it in position.
- Align the contact block to the three tabs of the actuator part and snap them together.
- Tighten the retainer nut against the panel.

4.2 Cage clamp terminals

- Capacity 2 x 18 to 2 x 12 AWG.

4.3 Conductor connection to cage-clamp terminals.

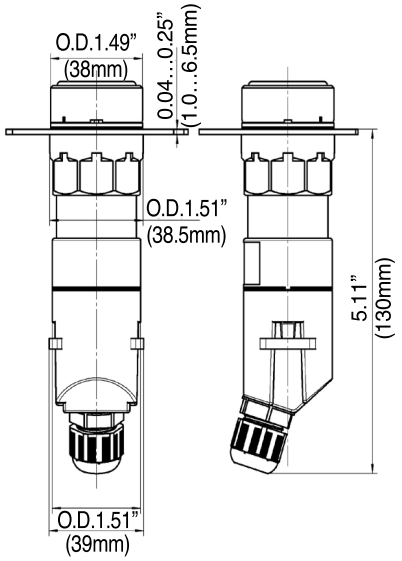


1. Cut-away, showing cage-clamp terminals with capacity of 2 x 18 to 2 x 12 AWG.
2. Open cage-clamp with a screwdriver (blade – 0.6 x 3.5mm) by inserting it into the square opening and hold the clamp open.
3. Insert the conductor into one of the rounded openings.
4. Remove the screw driver.

When installing devices without terminal cap, 8003/1•2, skip section 5.

5. Installation of devices 8003/1•1 into the panel.

5.1 Dimensions



5.2 To open the terminal cap use a screwdriver with blade of 0.6 x 3.5 mm.

- Position the screwdriver against one of the locking tabs.
- Turn it 90°.
- Pull the cap back a little and hold it in this position.
- Position the screwdriver against the second locking tab.
- Turn it 90°.
- Pull the cap off.

5.3 Use flexible cord with O.D. 0.2" to 0.35"

- Open the cable gland.
- Slide the cord through the cable gland.
- Pull the cord into the terminal cap.

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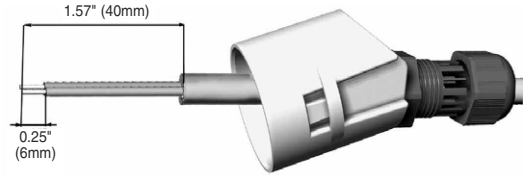
5.4 Prepare the cord.

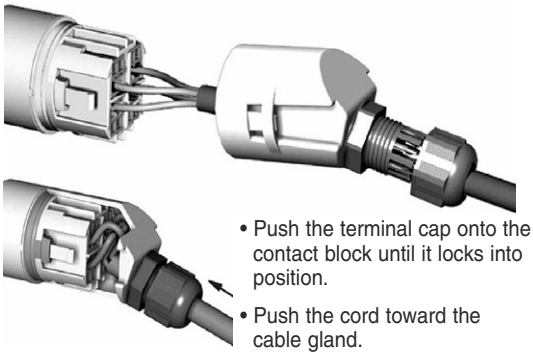


- Remove the outer jacket for the length of the cable gland.
- Strip off the insulation of the conductor 0.25".

5.5 Conductor connection to cage-clamp terminals.

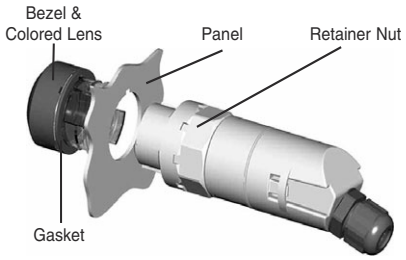
1. Cut-away, showing cage-clamp terminals with capacity of 2 x 18 to 2 x 12 AWG.
2. Open cage-clamp with a screwdriver (blade – 0.6 x 3.5mm) by inserting it into the square opening and hold the clamp open.
3. Insert the conductor into one of the rounded openings.
4. Remove the screw driver.

5.6 Closing the terminal cap.

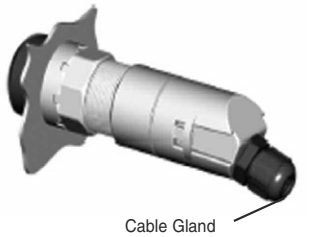


- Push the terminal cap onto the contact block until it locks into position.
- Push the cord toward the cable gland.
- Tighten the gland nut with 11 in. lbs. (1.2 N-m) torque.

5.7 Mounting the device into the panel



- Push the actuator from the front through the panel knock-out making sure the gasket is seated flat against the panel and lock it in position.



- Align the contact block to the three tabs of the actuator and snap them together.
- Tighten the retainer nut against the panel.

6. Maintenance

The only maintenance is a periodic inspection for damage and proper operation. Any damaged parts of the device and the panel need to be replaced promptly to ensure the electrical safety and explosion protection of the system.

Note:

The nature of these instructions is only informative and does not cover all of the details, variations or combinations in which this equipment may be used, its storage, delivery, installation, safe operation and maintenance.

Since conditions of use of the product are outside of the care, custody and control of the manufacturer, the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith.

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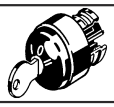
INSTALLATION OPERATION & MAINTENANCE SHEET

7. Parts and Accessories

Use only original spare parts and accessories, any others would invalidate the certification and warranty.

Item	Image	Description	Catalog Number
Actuator for Momentary Pushbutton		for type 8003/1••001	86 028 30 17 7 AA
Actuator for Emergency Stop Red Mushroom Key to Release from Maintained Position		for type 8003/1••009	86 028 30 17 7 AF
Actuator for Black Mushroom Key to Release from Maintained Position		for type 8003/1••006	86 028 30 17 7 AQ
Actuator for Emergency Stop Red Mushroom Maintained Action		for type 8003/1••010	86 028 30 17 7 AG
Actuator for Emergency Stop Red Mushroom Maintained Action (Jumbo)		for type 8003/1••015	86 028 30 17 7 AH
Actuator for Mushroom Maintained Black with Red Legend Disk		for type 8003/1••012	86 028 30 17 7 AR
Actuator for Black Mushroom Momentary Action		for type 8003/1••003	86 028 30 17 7 AB
Actuator for Key-Operated Selector Switch		2 Positions for type 8003/1••008-2 3 Positions for type 8003/1••008-3	86 028 30 17 7 AD 86 028 30 17 7 AE
Actuator for Rotary Selector Switch		for type 8003/1••726 2 Pos. maintained/maintained 2 Pos. maintained/spring return 3 Pos. free codeable*/maintained/free codeable*	 86 028 30 17 7 AI 86 028 30 17 7 AS 86 028 30 17 7 AK
Actuator for Rotary Selector Switch, Pad-lockable		for type 8003/1••727 2 Pos. maintained/free codeable* 3 Pos. free codeable*/maintained/free codeable*	 86 028 30 17 7 AL 86 028 30 17 7 AM
Spare Key		MS 1	3746050
Close-Up Plug		for unused openings	86 028 01 58 7

* All necessary parts to coat the actuator, either spring return or maintained are included in the package.

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